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REVOLUTION IN TIME

By P. W. WILSON

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In both England and America, Mr. Wilson is well known and highly regarded both as author and lecturer. After his graduation from Cambridge University he became a member of the editorial staff of the London Daily News, a connection which continued for twenty-one years and culminated in his assignment to New York as head of the American bureau of that journal. More recently he has been a special correspondent for the New York Times, his writings on international subjects appearing constantly in the magazine and feature sections. He is the author of a dozen books and many magazine articles.

TO THE student of calendar reform, it is obvious that there have arisen new and powerful reasons why logic should be applied to simplifying the measurement of time. Not only do the developments of science and industry emphasize the antiquated irregularity of the existing calendar. They facilitate a careful and considered revision on sensible lines and demonstrate that the need for this revision is rapidly becoming imperative.

Since the dawn of history, five thousand years have told their tale. The ruthless rhythmic rule of the centuries had been that empires rise to splendor and collapse in ruin. Today history no longer revolves in that cycle. It is flying at a tangent into uncharted space. Something is happening to civilization that never happened before.

It is not thrones merely that are overturned by revolution. It is not institutions alone that are hurled to the dust. Time itself has been trans-

formed. No calendar means to anybody what yesterday it meant to everybody. Years, months and days, hours, minutes and seconds, have acquired a new value in terms of experience.

It is as a currency of life that time has to be weighed, measured and allotted. As the preacher puts it, "To everything there is a season and a time to every purpose under heaven." To monetary problems, we devote the fullest and most patient attention. Time is not only money but more valuable than all the money that any of us can hope to possess. For what shall it profit a man if he gain the whole world and lose his "good time"? The method of determining time, of preventing the waste of it and of putting time to the fullest use is a major objective in the pursuit of happiness.

Broadly, our conscious life is divided into what children call work and play. We spend some of our time on doing what we have to do and the rest of it upon doing what we want to do. It is the balance between work-time and play-time that has been upset. In human conditions, there is a complete and apparently a permanent change. As a currency of life, time is being driven off the toil-standard.

What has been the age-long grievance of mankind? Why has he had to wipe the sweat from his brow and pray for rest? His burden has been overwork. "Mankind," writes Jean Jacques Rousseau, "was born free, but is everywhere in chains."

In every country and every period, the clank of the chains could be heard, day and night. Lashed by overseers, the ancient fellaheen of Egypt reared the pyramids. With bleeding back, the galley slave strained his muscles at the oar. Blind Samson was manacled by the Philistines to their millstones. Women also ground meal by hand. Fettered gangs of captives carried African ivory to the coast. In sweated industries, wage-earners wore out their souls and bodies in "poverty, hunger and dirt." Children were driven into coal mines and harnessed like beasts of burden to wagons in the pit. Criminals were condemned to lose sight and reason in salt mines. Trade unions fought the 12-hour day and the 7-day laboring week. The cry of the reformer, the slogan of every revolutionary was an appeal for emancipation from the tyrannous tasks of life.

What today is the grievance? Too much work? In highly organized communities, the trouble with millions is no work at all. It is not because the people have to work overtime that they are suffering. It is because they are "laid off." Over farm and factory, over mine, quarry and rolling-mill, there has come a change as absolute and as comprehensive in the field of economics as the change from the Ptolemaic to the Copernican system in the field of astronomy.

The economist expresses the change by saying that labor used to be cheap but is now expensive. The advocate of calendar reform translates

this statement into his own terms and declares that the time of the common people which used to be held in little account is now estimated at its true value. Hence, he insists that, amid the revolution in time, it should require no more than a slight exercise of common sense to regularize the method of measuring this factor in well-being.

The change in our laboring life is doubtless no more than a beginning. What we discern amid the clouds of depression that confuse our vision of the horizon, is not the new day but only the dawn. Over wide areas of the world, the task of life is as tyrannous as ever. In Russia there is no doubt as to the continuance of toil among the people. In China the coolie still carries coal in baskets across his shoulders. In Africa, the issue of ever-increasing urgency is whether the native is to be compelled to submit to forced labor, and if so on what terms. There are industries, even in the United States—the smaller stores, subways and buses—where hours are still long, and despite all the use of mechanical appliances in the home, a "woman's work is never done."

Still, if we sweep aside the complications of a chaotic finance, the mysteries of a fluctuating credit, the burden of debts and mortgages, and the barriers to trade, we can envisage the new world that is everywhere demanding a more accurate—not to say equitable—structure of society. Calendar reform—easy and simple in its adoption—provides what may be called a yardstick whereby claims to social justice may be defined and compared. Clear thinking is assisted by precise terminology.

Hitherto civilization has been painfully elaborated by the many for the enjoyment of the few, but in the twentieth century man is endeavoring, at any rate, to employ the labor of the few to construct a civilization for the enjoyment of the many. This is the significance of the mechanical, or what has come to be called the technocratic era. For thousands of years, we have had the leisured class. It is now into the leisured masses that forgotten men are mobilized.

If one would tabulate man's new working hours, one starts with a week of 168 hours. To the sacred duty of going to bed, sleeping and getting up in the morning, let us allot 9 hours a day or 63 hours a week. Deduct this time, and we are left with 105 hours in the seven days. If we allow two hours a day for meals, or 14 hours a week, we are left with 91 hours. Next let us suppose that a person works 8 hours a day 6 days a week, or 48 hours in all, and that he spends an hour a day or 6 hours a week going to and from his place of employment. The consequent deduction of 54 hours leaves 37, all of them waking hours, in which a person is entirely free from the necessities of work and eating. Never before has industry offered the worker a reward of leisure approaching this in the abundance of its opportunities.

Nor are we at the end of possible reductions in the hours of labor.

Years ago Lord Leverhulme, the manufacturer of soap in England, published an argument, supported by statistics, in favor of the six-hour day, with the machines running on two shifts, instead of one shift of eight hours. To his own satisfaction, he demonstrated that such an increased use of machinery would yield an additional output which would provide for the double payroll of wages.

Long before the depression set in and limited production, industrialists were offering economic reasons for cutting out the half day on Saturday and running their plants on a five-day week. The American Federation of Labor has declared recently for a week of five days and six hours a day. Such limitations in the hours of labor, fifty years ago, would have been unbelievable, and it is thus amid an upheaval in our thinking on industrial reorganization that the language of life is simplified by calendar reform.

We find, in this new era, that we need to take a new view of what we describe as unemployment. It is customary to suppose, let us say, that in England there are normally a million or two wage earners out of work. But the permanently unemployed, save in the depths of this depression, are comparatively few. What really happens is that a dozen million wage earners work a short year.

Many professional men are accustomed to take a month's vacation. During this vacation, it is not usual to include them among the unemployed. Why should it be illogical to suppose that an 11-month year will be secured by machinery for labor? In the chronicles of modern industry, such an 11-month working year is likely to be associated with such inevitable economic reforms as the 6-hour day, the 5-day week, and the stabilization of our antiquated calendar.

Men have fought for nationality—for justice within the nation—for freedom of worship, of reading, of writing, of speech—for the franchise by which they can vote for those who shall conduct the government they obey. Today men are winning the greatest right of all — the Magna Charta of the Calendar—the liberty that is leisure—the supreme and final control of time as the title deed to life. Amid such a battle for the larger opportunities of life, it is inevitable that we should turn our minds to arrangements for straightening out our inadequate system of time measurement.

So little accustomed are we to the latest privilege which has come to us as we march along the path of progress, that frequently we save time only in order to kill time. The limited train, with its special fare, is driven over the rails at 70 miles an hour, the passengers are landed punctually with an hour or two to spare—and wandering around a hotel, they do not know what to do with that hour or two.

The new industries that, during the twentieth century, have developed

to vast proportions, are industries consecrated to the enrichment, or at least the entertainment, of leisure. The movies, the automobile, the radio, the vast output of periodical literature, the golf courses, the country clubs, the elaboration of once-prosperous resorts like Monte Carlo, Deauville and Miami, the organization of social activities within the churches—all these enterprises may be defined as endeavors to provide a value, genuine or spurious, for free time. We are, as never before, time conscious, and the consideration of calendar irregularities and deficiencies thus accords with our habitual mood.

There is another and compelling reason why an improvement in our method of time measurement—a revision of the calendar—is a step demanded by progress. It is not enough, in these times, for the economist to discuss the fluctuations of commerce and industry and finance in the usual terms of currency, of tariffs, of natural resources, of wages and of profits. Between the producer and the consumer, there is the time balance. Unemployment means that too much time is spent on production and too little on consumption. We have yet to adjust our use of time to the new methods of machinery.

When men and women worked with their hands alone, the surplus of production was so small that the few favorites of fortune could dispose of it. Nebuchadnezzar built the hanging gardens of Babylon; and near Naples the villa of the Roman consul Lucullus, with its parks and fishponds, was proverbial, while a single feast provided by that lavish and luxurious host cost 50,000 dinarii or about $8500.

But we cannot have mass production without mass consumption. It is not now for the few alone or for the few mainly that recreational industries are conducted. The opera with its diamond horseshoe is fighting for existence. The moving picture, costlier than the opera, receives a tribute from millions. It was for dukes, ecclesiastics and other private patrons that Benvenuto Cellini wrought his masterpieces of jewelry. The finest designs are now multiplied by the billion in ten-cent stores. The Sistine Madonna of Raphael is priceless. But year by year, far more money is spent on reproductions than could ever be paid by any purchaser for the picture itself. The copyright, if it existed, would be more valuable by an immense sum than the original.

So with sports. They used to be the privilege of the nobles. It was the baron who tilted in the tournament, who flew the hawk, hunted the deer and the wild boar. Today sport only flourishes in the amphitheatre. It is either the pastime of the multitudes or the spectacle that is prepared for their enjoyment.

Reform of the calendar is a symbol of many problems which humanity faces today. A new conception of career has to be thought out. We have not only to adapt ourselves to a command of our time by others, we have

not only to seek the command of others' time by ourselves—we have to learn how to use the time that has become, by fee simple, our own possession. We have to learn to act as our own masters, not to read but to know what and how to read, not only to have the radio but to know what is worth listening to, not only to know of pictures but to look at them. The garden, the hobby, the art, the game, religion, amateur drama, social pageantry—these are as much a part of the pursuit of happiness as that achievement which we call business, profession or trade. The worker who uses his leisure to advantage emerges as more successful than his employer, who in leisure has failed. Wealth that cost time is seen to be poverty, and poverty that saves time is seen to be wealth.

Such is the situation that faces us today. Time and the calendar are alike in the midst of transition. It is a renaissance in life itself of which time is the currency. The reform of the calendar is thus corollary to and expressive of the deeper significance that may be discerned in a period of unprecedented possibilities.

SUGGESTION FROM ENGLAND

By F. J. W. Whipple
Superintendent of Kew Observatory, London

MAY I be allowed space in your Journal for consideration of an amendment I should like to propose to The World Calendar?

It was one of the virtues of the calendar of Julius Caesar that the extra day of Leap Year was placed at the end of the year. By what may be termed an irrelevant accident—an alteration in the date of electing consuls at Rome—the month of January came to be regarded as the first of the year, instead of March, and the extra day of Leap Year now falls at the end of the second month.

For any calculations in which one has to reckon the number of days that have expired between one date and another, it is desirable to have a consistent calendar. At present we have February beginning on the 32d day of every year, but August may begin on the 212th or on the 213th day. In the proposed World Calendar, this anomaly persists. It could be eliminated without the sacrifice of any of the virtues of the plan: all that is needed is to interchange the seasons at which the two special or extra days are inserted. Place midsummer day in every year at the end of June, between Saturday, June 30, and Sunday, July 1; and place Leap Year Day at the end of December every fourth year.

Then every date in the year from January 1 to December 30 will recur with regularity in the same ordinal number. Is there any drawback to this proposal?

CHURCHES ON EASTER

By Dr. Hans Schönfeld

Director of Research, Universal Christian Council, Geneva

Stabilization of Easter is favored by an overwhelming majority of the churches included in the Universal Christian Council—embracing all important Christian denominations except the Roman Catholic. The formal report of Dr. Schönfeld on the Council's official questionnaire, from which this article is excerpted, is a document of 50 printed pages, the full text of which can be obtained by writing him at Geneva, or the American section at 287 Fourth avenue, New York (Dr. Henry S. Leiper, Executive Secretary).

IN THE middle of December, 1932, the Research Department of the Universal Christian Council distributed to the Churches a full report on the proposal of the League of Nations with regard to the stabilization of Easter, and a memorandum on calendar reform. At the same time, by means of a questionnaire, the Churches were requested to let the Research Department know their views as fully as possible.

The inquiry was made by the Research Department partly in direct contact with the individual Churches, partly in close cooperation with the secretariats of the different sections of the Universal Christian Council, as well as with the larger Church federations. The following statements of results to date deal with the essential resolutions and proposals for the stabilization of Easter.

Orthodox Churches. (Constantinople, Greece, Egypt, Syria, Palestine, Jugoslavia, Roumania, Poland, Bulgaria, etc.). The general attitude of the Orthodox Church, which was established by the resolutions of the Panorthodox Congress of 1923, is still regarded as the basis of the present attitude to the proposals of the League of Nations. Thus the Orthodox Church is ready, if all the Christian Churches are in common agreement, to accept a stabilization of Easter. The official representative of the Oecumenical Patriarch has declared himself for stabilization, and reported accordingly to the Oecumenical Patriarch of Constantinople without any objections having been raised. Consequently there are no fundamental objections from the Orthodox Church to a suitable stabilization of Easter, provided that a general agreement can be reached. The Patriarch of Alexandria, the Archbishop of Athens, the Archbishop of Cyprus and the Archbishop of Roumania have again emphasized the common attitude of the Orthodox Churches in a direct reply.

A particular expression of opinion as to the latest proposals of the League of Nations is still to be expected from some of the individual autokephalic Orthodox Churches. The Holy Synod of the Orthodox Rou-

manian Church has concerned itself with the proposals without having arrived at a final conclusion. An expression is expected from the Orthodox Church of Jugoslavia after the 1933 meeting of the Council of Bishops. An official statement is also expected from the Orthodox Church of Poland "on the whole question of the stabilization of Easter and of the calendar reform eventually to be connected with it."

European-Continental Churches. (Austria, Belgium, Czecho-Slovakia, Denmark, Estonia, Finland, France, Germany, Holland, Hungary, Iceland, Latvia, Norway, Poland, Roumania, Sweden, Switzerland, etc.). In all the churches of this section of the Universal Christian Council there is agreement that there are no fundamental objections to be raised to the stabilization of Easter which, on the contrary, is welcomed by an overwhelming majority of the Churches. In most of the Churches this attitude is definitely made dependent on all Christian Churches giving their consent. The Churches raise no objection to the date proposed.

No church raises fundamental objections to a calendar reform which would eventually be necessitated as a result of the stabilization of Easter, although the Churches in connection with the actual inquiry do not deal with this question or do not go into it very extensively. Only in one Church, where a definite decision still remains reserved, is agreement on Easter connected with the demand for complete reform of the calendar.

British Churches. (England, Scotland, Wales, Ireland and Canada.) All the Churches of the British Section, as far as they can give their decision up till the present time, agree that fundamental objections to a stabilization of Easter cannot be raised. Some of the Churches or Church federations make their decisions dependent on general consent of Christian Churches. No attitude is adopted toward the calendar reform that will of necessity eventually result from Easter stabilization.

The general attitude of the Church of England, which was established by a resolution of the Convocation in 1925, is still regarded as the basis for a renewed attitude to the proposals of the League of Nations. According to this, "from the point of view of dogma, there was no reason why the Church should object to the choice of a fixed date for Easter, but could only consent if it were accepted by the other Christian communities."

American Churches. (Special Inquiry by Federal Council of Churches.) An overwhelming majority of these Churches "would join in a common attitude of all the Churches throughout the world." An overwhelming majority would "probably be favorable" to Easter on a permanent date.

The answer "yes" was returned by 24 denominations to the question: "In the event of some date being agreed upon by official representatives of Catholic, Eastern Orthodox and Protestant bodies throughout the world as a permanent date for the observance of Easter, do you think that the governing body of your denomination would be likely to make some

specific declaration of attitude with reference to the change?" The affirmative answers came from the following: Northern Baptist Convention, Free Baptist, Congregational and Christian, Evangelical Churches, Evangelical Synod of North America, Friends (Five Years Meeting), General Conference Methodist Episcopal Church, Methodist Episcopal Church South, African Methodist Episcopal Church, African Methodist Episcopal Zion Church, Colored Methodist Episcopal Church, General Conference Methodist Protestant Church, Presbyterian Church, General Synod of the Reformed Church, Reformed Church in the U. S., Reformed Episcopal, United Brethren, United Lutheran, Free Methodist, Cumberland Presbyterian, Reformed Presbyterian Church, Universalist General Convention, United Presbyterian Church, Seventh Day Baptist.

Three denominations answered "No," and one answered "Doubtful, but not opposed to change." Full details of the answers from American Churches are contained in the formal report as published.

General Conclusions. From all the above decisions and reports it emerges that, in spite of all multiplicity and difference of opinion, a united attitude to the essential questions of a stabilization of Easter can be counted upon, as the following findings, to date, of the inquiry, will show: I. The overwhelming majority of the Churches agree that objections of a fundamental nature to a stabilization of Easter cannot be raised. II. The overwhelming majority of the Churches make their agreement to stabilization dependent on a general agreement among all Christian Churches on this question. III. To the proposal of the League of Nations to fix Easter on the Sunday following the second Saturday in April the vast majority do not raise any objections.* IV. To the question of calendar reform eventually of necessity to be connected with the stabilization of Easter, the majority of the Churches did not express an opinion. As far as this question affected the attitude of the Churches, no fundamental objections to it were raised.

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* According to resolutions officially adopted by the Council of the League of Nations, Sunday following the second Saturday in April is proposed as the day for Easter. If this proposal were accepted, the date of Easter would be subject to variation somewhere between April 9 and 15 (a matter of seven days), instead of the present variation between March 22 and April 25 (a period of 35 days).

In connection with general calendar reform, a further question is raised as to whether such an arrangement might not include the fixing of a *definite date* for Easter. The traditional date of April 7 for the Crucifixion is fairly generally accepted. Certain sections of opinion have expressed the view that the stabilization of Easter ought to be carried out *in connection with calendar revision* or at least be linked up with such a reform. It will be seen from the Report of the League of Nations that the official representatives of the Churches raised no insuperable objections to a general reform of the Gregorian calendar, so that in any case up to the present no fundamental misgivings have been expressed by the Churches to a combination of the stabilization of Easter with a general reform of the calendar.

If either of the main proposals for the general reform of the calendar are introduced, the acceptance of the League of Nations proposals would mean that Easter would fall on April 15. Certain objections have been raised to that date as it is a date when payments of rent, interest and taxes fall due, and this would interfere with the religious spirit of the festival. Those who voice these objections therefore propose April 8 for Easter, and this view is strengthened by the fact that April 8 is almost identical with the date that tradition assigns to Easter as the historical one.

STORY OF THE CALENDAR

By David Thibault

This is the third of a series of articles in which the author traces the evolution of the calendar from its earliest beginnings to the present time. His studies aim particularly to draw from this evolution the conclusions which are most important in the current discussions. Continuation of his studies will appear in future issues.

VII

PRIESTLY domination of calendar-science was ended by the same agencies which ended priestly domination of governments and secular rulers. The very factors which made priest rule so strong at home made it weak abroad. Gods and religious practices in different cities and different lands differed widely. The priest who was all-powerful in his own community might be laughed at, along with his mysteries and his gods, in the next city or the next kingdom.

Therefore when nations began the conquest and subjugation of other nations, men found that the most effective leader was one who had a force within himself that was not dependent upon local beliefs. Perhaps more than once in those old times, while a pious army paused to sacrifice to some pet and particular god, the barbaric enemy demonstrated that the sword is mightier than the incense burner. The 4,000 deities of the Sumerian pantheon might be laughed down along with the 2,665,866,746,664 minor fiends which a writer on witchcraft credits to our own religion in medieval times. But a resolute man with a sword in his hand and armed men at his back speaks a language fairly plain to all, and the blood of one man is as red as that of another, regardless of theologies.

Military conquests which unseated ancient civilizations, and the expansion of thought due to mingling of peoples, shattered priestly domination of the calendar. This was not accomplished at once. In Greece and Rome the priest, the augurs, the oracles and soothsayers held on for centuries. But knowledge was spreading from the classes to a limited few of the masses. Man's fear was leaving him. Wholesome curiosity quickened in its place. The everyday world became an interesting place for him as his ships and his armies went about conquering lands and building commerce.

The mysteries of the temple spread steadily outward and leavened the masses. Men began to use what once they dared merely to revere as the special knowledge of others. They began to understand what once the priests expounded, perhaps without themselves understanding. The human mind reached out like a timid hand, and plucked the fruits of seven thousand years.

This chapter of our calendar story deals with the quickening of thought

in the minds of men. It tells of the increase in wisdom and independence of thought which made possible the final divorce of calendar science from the mysteries of the temple. It tells of how men *thought* themselves from under the thumb of priest-rulers. It tells of the substitution of philosophy for fear, and of honest, inquiring doubt for the blind and frenzied faith of the emotionally dominated masses of those ancient civilizations.

Two thousand years before Christ the beginnings of Eastern civilization began to filter through Crete into Greece. But as we have seen, Assyria, Babylonia, Egypt, and the politically unimportant tribes of Israel, had already had the heyday of their power, and the Ancient World was leaning toward the fall which later placed it under the iron heel of Persia. Then Greece was a country of barbarians in the eyes of these old civilizations. But the Greeks of that day had the barbarian virtues of vigor and virility along with barbarian handicaps. From the first, too, they were a thinking people and loved liberty. It is of immense importance to calendar science and to all science and art that Eastern culture was what it was, and that the ancient Greeks who received and rejuvenated it were what they were. When a football player hurls the ball in a forward pass, he has acquitted himself when the ball has been skillfully thrown; but the ball is to be caught and carried toward the goal before the manoeuver as a whole is effective. So with culture. That the East had much to give Greece is important: that Greece had an active, constructive, vigorously living intelligence ready to receive this culture is perhaps more important.

Why more important? Because the ancient civilizations didn't seem to know how to improve their property, so to speak. They developed the beginnings of many sciences, of architectural forms, of numerous lines of thought. But they didn't go forward with their discoveries and accumulated wisdom. Indeed, there is evidence that they went backward in some instances. But again, why?

The answer lies in the type of government as well as in the type of mind of those who were governed. As we know, the priest and the king were closely associated in making and administering the laws of these countries. A small band of rulers remained supreme by maintaining unchanging traditions founded upon superstition. This condition was splendid for the ruling class. It kept the masses in strict subjugation, not only through the discipline of civil tradition and fear of the civil law, but through the subtler, more terrifying powers of supernatural fear and superstition. Ancient Egypt was a changeless civilization. And a changeless thing is a dead thing. In time Persia overran Egypt, and became the champion of the old East against vigorous young Greece.

On a September afternoon in the year 490 before Christ, ten thousand Greeks—mostly Athenians—swept down the forbidding hills that form

a crescent about the plain of Marathon, and defeated a Persian army ten times their numerical strength. At that time Persia ruled all of the world that was worth the having. Her captains and satraps were shrewd politicians, clever, energetic men of war. But her soldiers were a herd sent to overwhelm the enemy by sheer weight of numbers.

Why did the Greeks win at Marathon? Better brains, better weapons, better spirit—that's the answer. The individual Persian soldier was not inferior to his Athenian foe in physical fitness, in courage. But his leaders, trained in the priest-king traditions, regarded him not as a man, but as one fighting unit to kill, to be killed, to be replaced. The stirring appeal which the Greek leader Miltiades and his captains made to their own soldiers on the eve of battle could not have been made by Datis, the Median leader of the Persian hosts. The Greeks swung down the mountain slopes of Marathon chanting an exhortation full of such phrases as "Strike for your freedom!" The Persian soldiery had no freedom; they had no country. They merely had rulers.

Nine years before the battle of Marathon the Athenians had dared oppose Darius, the Great King. In his wrath the Persian ruler asked what manner of men these Greeks were. Let us inquire also; for it is all important in the history of the calendar and the history of all science, art and culture, to know. And in studying early Greek thought, let us note how strongly independent it is—how far it leads from the changeless mysticism of the temples of the Nile.

Today we use a textbook written by a Greek who was born 300 years before Christ, in the time of Ptolemy I. The author was Euclid, the book is the "Elements of Geometry." It has the distinction of being the only textbook which has been in use for more than 2000 years. The man who wrote it dared to think. When King Ptolemy asked him if there were not a shorter cut to knowledge of geometry than the "Elements," Euclid replied, "There is no royal road to geometry."

Herodotus, born nearly two hundred years earlier than Euclid, has been called the "Father of History." For his day he was a great traveler and he devoted the best years of his life to research and first-hand examination of the facts which he incorporated in his books.

"In reality there is nothing but atoms and space," said Democritus, another Greek, sometime 400 years before Christ. A regular Einstein of a thought; a hard-headed thought! And it was not mumbled at the stars, nor gleaned from gazing at the liver of a sacrifice sheep. A hundred years after Democritus came Epicurus; and before him came Sophocles, the great tragic poet. So we see, thrust through the folds of the centuries from 500 B.C. until Roman domination, were brilliant thoughts and brilliant lives, like pins holding, molding and ornamenting a dark robe.

Freed of the Persian threat, Athens turned her navy into a merchant

marine, and traded with the then known world. There was a mighty mingling of thoughts, races, and creeds in Athens. Democracy and freedom of thought were encouraged by such conditions. Philosophies flourished. Perhaps of greatest interest and significance were the Sophists. These were excellent teachers who, avoiding pure philosophy on the one hand, and physical sciences on the other, laid the foundations for liberal education. "I profess to make men good citizens," Plato has Protagoras, the Sophist, say,—not a sentiment one could hear uttered beside the Nile.

We can see now, how calendar lore, along with other sciences, was wrested from the priest-class by the independent, vigorous thought of the Greeks. Can we imagine Euclid, or Archimedes, who wrote learnedly and well of "the isoperimetric problems of the circle and the sphere," going to some muttering witch-doctor for his facts? Can we picture Socrates or Plato substituting the traditions of priests for his own clear thinking? The only wonder is that, in this welter of bold thinking, superstition and dogma were allowed to retain even the second-row seats in which we shall find them afterward—in which they sit perhaps even today.

Ancient Greece had a calendar, of course. As a matter of fact, she had several, all of them interesting. Through them all beat the rhythm of the number twelve. But the rhythm tripped a bit now and then, because even the most highly developed calendar of ancient Greece held to the soli-lunar system. Which means that the year began when the sun returned to a certain position, and each month began with a full moon. As the solar year is not divisible by the lunar month a system of adjustments was necessary. Into their characteristic eight-year period of time called the *oktaeteris,* the Greeks inserted three extra months. That trimmed the boat a bit, but it still rocked, nevertheless. We shall not touch more fully upon the Greek calendars because our story assigns to Greece the function of freeing men's minds from ancient temple traditions. The Greeks re-introduced *thinking* into the world. The real stabilizers and law-makers were the Romans.

Rome caught up Greek culture very much as Greece had caught up the civilization of the East. And each nation leavened and colored the traditions which it absorbed with its own vigorous thought. Now about ancient Roman thought there is the hard glitter of a steel blade. Romans came, Romans saw, Romans conquered. They also thought, and their thoughts fell into geometric patterns. Paradoxical as it may sound, they were civilized barbarians. Says the great historian Creasy, "a general taste for literature, a keen susceptibility to all intellectual gratifications, a minute acquaintance with the principles and practice of their own national jurisprudence, a careful training in the schools of the rhetoricians and a fondness for either partaking in or watching the intellectual strife of forensic oratory, had become generally diffused, without, however,

having humanized the old Roman spirit of cruel indifference for human feelings and human sufferings."

So long a sentence must have some truth in it. But in summing up the ancient Roman, let us give him the other virtues of steel as well as the hardness. Let us admit that his exactions upon others were only extensions of the discipline which he laid upon himself. And all of these things appear in his thinking. He was no more afraid of facts than he was of a foe in battle. He marshalled his thoughts very much as he marshalled his legions. He demanded order or the appearance of order in all things.

The Roman sentries at the gates of Pompeii stood at their posts unflinchingly when the fiery ashes of Mount Vesuvius burned out their hardy lives. No one had told them to seek shelter, so they stayed on duty. That was Roman discipline. It is the kind of discipline which Julius Caesar applied to the calendar. But what was this early Roman calendar which Caesar was to bring to such perfection that, with his reforms, it would stand unchanged for more than 1600 years?

The Roman calendar of the Republic was of the Greek type, but cruder. There were twelve lunar months. Note the names: Martius, Aprilis, Maius, Iunius, Quintilis, Sextilis, September, October, November, December, Ianuaris and Februarius. The months of Martius, Maius, Quintilis and October had each 31 days, the rest 29, except Februarius, which had 28. So it appears that February has been "short-changed" in the matter of days for many centuries. The Roman year was not continuous. There were not days enough to make it so. Consequently a gap existed between the end of one year, and the beginning of the next. Since this gap came in the winter, which would be a season of slight activity among the barbarians inhabiting the regions north of Italy, it is believed that the early calendar of Rome was brought and set up by invaders. March 1st was the official New Year's Day.

It was the office of the pontifices to watch each month for the new moon. They proclaimed its appearance from the Capitol. Therefore the first day of the month was designated as kalendae, or callings. The Ides and the Nones were the other subdivisions of the month. There was an eight-day week, at least during one period, which ran independently of the month. These periods seem to have had no religious significance, no distinctive names. They were simply the time between market days.

The pontifices were only human, and often they erred in fixing the kalendae. It is pointed out by scholars also that, since a magistrate's tenure of office was carefully limited within a fixed period, the pontifices often manoeuvered the calling of the first day of the month to favor or prejudice the political activities of friend or enemy. Be that as it may, we know that by the time Julius Caesar assumed the dictatorship of Rome, the calendar was tangled into hopeless knots.

WHY I HAVE CHANGED

By Frank Vincent Waddy

One of the authoritative handbooks on calendar reform, published by Haldeman-Julius in the famous series of "Little Blue Books," was written by Frank Vincent Waddy, a prominent accountant of Hollywood, Calif. In his book, written in 1923, Mr. Waddy advocated the 13-month calendar. His views have changed in the past ten years, and he is now an enthusiastic supporter of The World Calendar. He explains his present stand in the following article.

DURING the year 1923 and prior to the inception of the present widespread public interest in calendar improvement, I had the honor of addressing the Astronomical Society of Los Angeles at the University of California on "The Origin and Evolution of the Calendar." The substance of my lecture was published later by the Haldeman-Julius Co.

An extended acquaintance with Mr. Moses B. Cotsworth, formerly of York, England, had naturally influenced me in favor of his proposed 13-month perpetual calendar plan, which I advocated chiefly on account of its uniformity and the advantage of having the same days of the week fall on the same dates in each month.

In 1931, however, my attention was drawn to the suggested World Calendar of 12 months, which, after careful analysis, has completely superseded the other in my estimation and which I now recommend with enthusiasm.

To sum up the numerous benefits of The World Calendar, those of widest appeal are probably the following: (1) Uniform structure and simple form; (2) Easily memorized salient dates; (3) Divisibility of 12 by 2, 3, 4 and 6; (4) Simplicity of mental or other computations of interest, discount, amortization and similar accruals; (5) Augmentation of holidays; (6) The eight 30-day months have four Sundays and the four 31-day months have five, thus giving an even 26 week days to every one of the twelve months. This symmetrical arrangement of the months will be of great convenience in compiling payrolls, in planning vacations and in fixing dates for directors' meetings or other events in corporate affairs.

I am convinced that if the 12-month World Calendar were boldly espoused by the Government of the United States, the other leading nations would shortly follow, and its advantages would rapidly become so obvious to the authorities of the remaining peoples that only a few years would elapse before its universal adoption by all the civilized races of the earth.

Of the six principal advantages claimed for the International Calendar, comprising 13 months of 28 days each, at least four can be claimed with equal cogency for The World Calendar of 12 months, composed of four

quarters, each containing 91 days, plus an odd "Year Day" after December 30 and a quadrennial "Leap Day" after June 30. These advantages are, or were: (1) Constant uniformity of days and dates; (2) Standardization of clocks and watches and division of dials into days; (3) Establishment of a permanent date for Easter; (4) Extension of holidays by linking them with week-ends; (5) Reduction of over-expenditure due to irregular recurrence of paydays; (6) Avoidance of confusion among extant calendars in foreign countries. Let us consider these six points in the above order.

Uniformity—This advantage of the 13-month calendar can be easily compensated in the 12-month plan by a simple mnemonic as an aid in remembering the datal incidence of the first Sunday in each month, from which that of the remaining days can be instantly computed. Since The World Calendar provides for an even sequence of 31, 30, 30 for the number of days in the successive months, repeated four times during the year, it is only necessary for mnemonic purposes to remember the simple number 153, which is the "key" number, indicating 1st, 5th and 3rd for the initial incidence of Sunday in January, February and March respectively, then again for April, May and June and the remaining two sets of three months. It is thus indexed in the mind that the Sundays in the 1st, 4th, 7th and 10th months will be 1, 8, 15, 22 and 29. The Mondays must therefore be 2, 9, 16, 23 and 30, and so on for each successive day through the week up to the Saturdays, which will be 7, 14, 21 and 28.

If it is desired to know, for example, on what day of the week March 19th will fall, the number 3 is instantly recalled as the index number for that month, with Sunday as the key day for the year, so the Sundays are 3, 10, 17 and 24, from which it is evident the 19th will be a Tuesday. As the insertion of "Year Day" after Saturday, December 30th, takes care of the 365th day, the new year starts again on Sunday, which makes the same convenient number 153 available for use as a mnemonic key during the next and all successive years.

Clocks and Watches—Under The World Calendar plan the dials of all timepieces could be marked with 31 divisions for the days, and at the end of a 30-day month the date hand would merely need setting one space forward to the first day of the next month, an operation requiring no time or trouble and easily attended to when winding the clock or watch. In the case of electrically operated timepieces the date hand can easily be adjusted to the first of the month when required. At the end of the four 31-day months no setting would be needed, and the date hand would continue to tell the dates during the next month without interruption. It is not necessary to adopt a 13-month calendar in order to enjoy the advantage of a date hand on clocks and watches—in fact there are plenty of such timepieces in existence already, even with our present irregular calendar, their only requirement being adjustment at the end of the month, which

may contain 28, 29, 30 or 31 days. Even if this advantage claimed for the 13-month calendar had to be sacrificed under the reformed 12-month plan, I believe its loss would be abundantly compensated by the infinitely more important convenience of not having to try to divide 13 by 2, 3, 4 and 6, operations occurring constantly in interest and other computations, and all of which give a fractional or decimal quotient. Lastly, the absence of the proposed date hand from clock and watch dials would not be noticed by anyone using a mental mnemonic as suggested above, for everyone knows what day of the week it is and only a moment's thought is required to tack on the date.

Easter—This festival, so important to church-goers and others, will be fixed once and for all time on April 8th (the historic 99th day of the year and nearest the historical date), regardless of the moon's phases or other irrelevant factors, under the influence of which it has been wandering about for centuries over a period of five weeks. The added convenience and economic saving in having Easter no longer a movable feast but a permanently stabilized date would be enormous.

Linking Holidays with Week-Ends—This excellent suggestion can be adopted as easily under the reformed 12-month as under the 13-month plan. There is nothing sacrosanct about July 4th or any other 24-hour period arbitrarily chopped out from the sequence of days, and if these dates happen in any year to fall on a day other than Monday they can always be moved to the nearest Monday, celebrated on that day and still called "Independence Holiday" or some similar title indicative of their significance. Christmas, December 25th, will fall on Monday in The World Calendar.

Regulation of Paydays—Under The World Calendar there will be four Saturdays in each of the first two months of a quarter-year and five in each third month, making 13 Saturdays to a quarter and 52 in a year. To those who object that monthly house-rent and other expenses must be met by weekly wage-earners in eight of the months out of four weeks' pay checks, it may be pointed out that in the remaining four months the weekly wage-earner gets an extra pay-check, and if his domestic and other expenses are budgeted on the eight-month-four-week basis he can enjoy another entire week's pay once each quarter. Thus the fact that for two-thirds of the year, in order to keep expenditures commensurate with earnings, he must figure on a four-pay-check month, should exercise an effect more salutary than otherwise, and the 13th pay-check in each quarter could be regarded as a kind of bonus available for emergency expenses, such as sickness or accident. Recipients of monthly salaries need not be affected by the 31, 30, 30 sequence for each rent check paid covers a calendar month regardless of the number of days, and the comparatively few recipients of quarterly salaries will draw an equivalent amount every 91 days, and always on the 30th of a month.

Conflicting Asiatic and Other Calendars—The remedying of this difficulty would not be complete under either reform proposal, and a European traveler in Egypt, for example, might still be puzzled as to whether a date set for an appointment is intended to be according to the Moslem, the Coptic, the Jewish, the Julian or the Gregorian calendar. But how many of us have appointments in Egypt?—or in other countries where conflicting calendars are in use. Under The World Calendar, for every person inconvenienced by non-standardization of foreign calendars, there would be probably a million people enjoying untold benefits of a practical kind.

Accounting Periods—Furthermore, it is clear that under The World Calendar plan there would be nothing to prevent anyone dividing the 52 weeks into 13 groups of 4 each if he wished to do so for any special purpose. If, for example, a bank, a building and loan association or a corporation desired to compute interest payable or receivable, wages or costs, on a strictly day basis, and to set up the accrual every 28 days, for the sake of uniformity in periods and amounts, there is no reason why it should not adopt such procedure. The only requirement would be a table showing the incidence of the date concluding each 28-day period.

For those sufficiently meticulous as to charge or pay interest for Year Day an extra day's amount could be tacked on to the December 30 accrual. The same procedure, if desired, might be followed in the case of Leap Day on the occasion of its quadrennial recurrence.

In this connection it is interesting to note that our familiar division of the month or "moon period" into four weeks of seven days was originally quite arbitrary. All contentions of astrologers to the contrary notwithstanding, there is no fateful significance whatever in these periods for seed-planting or other purposes, and the month or 28-day moon period might have been divided with equal logic into seven four-day periods instead of four sevens.

Thus it becomes increasingly clear that the salient advantages claimed for the 13-month plan belong equally to The World Calendar, and as pointed out by a distinguished British authority on calendar reform, the late Alexander Philip: "If a perpetual 12-month Calendar were adopted, each of the 52 weeks would occupy a definite position in the year and there would be nothing to hinder the grouping of weeks as convenient. But it would be wholly unnecessary to accompany these arrangemnts by an attempt to abolish the use of the familiar and well known 12 months." This eminent authority also shows that in abandoning the 12-month plan for dating purposes, "there would be a breach with the past and confusion in the future," and the forcible disruption of the 12-month sequence to which the world has been accustomed for centuries, "far from being a boon, would cause great disturbance in both business and private affairs."

NEW DATES FOR OLD

By Charles D. Morris

(From the Review of Reviews and World's Work, August, 1933)

MEN OF BUSINESS, economists, statisticians have long complained of curious and irritating anomalies in the calendar. A February of 28 days in a year where the other months have 30 or 31 days is condemned as an indefensible irregularity nor is it any wonder that calendar reform should have become an accepted plank in the program of Chambers of Commerce and public bodies of similar influence. It is urged that through the League of Nations some adjustment of our present year ought to be arranged, and the League has been examining into the matter.

Most of us have been made familiar with the late George Eastman's interesting and widely advertised proposal that the year should be divided into thirteen months instead of twelve. It is argued—and plausibly—that equal months of 28 days, each embracing four precise and uniform weeks, would be convenient for many purposes.

To be frank, I have never been impressed by the possibility of this particular plan. As it seems to me, such an idea of calendar reform, whatever its theoretical attractions, must always be academic.

Calendars are not the exclusive possession of captains of commerce, farsighted and honored though they be. Everybody has an interest in the calendar who can date a letter, however ill-spelt, or draw up a check for a payment, however trifling. What here we have to deal with is sentiment that is often more subtle than public opinion itself. Our attitude is influenced by traditions of which we may be no more than subconscious, by superstitions that we would not care explicitly to avow. Nor can this slow world move more quickly than the cumbersome procedure of parliaments.

To break up the sequence of the seasons, to upset the equality of the four quarters on which depend many customary payments, to compel multitudes of people to transfer their birthdays and other domestic anniversaries to a thirteenth month called Sol, to call upon monthly periodicals and their advertisers to arrange for an extra issue every year, to abandon the signs of the Zodiac—such changes do not seem to be practical politics. If this is calendar reform, nothing in our time is likely to come of it.

Yet all over the world, the calendar is now under discussion. Its fascination continues to be, what it has always been, inescapable. Long before man invented anything worthy to be called a clock, he used a calendar, and to perfect the calendar has been an agelong task, never completed.

Of late years, a new reason has arisen for regarding that task as immediately urgent. During the long succession of the centuries, calendars in

actual use, like currencies and languages, have been numerous. At this moment, several of such venerable calendars still survive. But in all cases save one, they survive only as a religious and ceremonial memory. For the first time in history, one predominating calendar has emerged out of the chronological chaos and, broadly speaking, has become international. For all the usual business of life—diplomacy, correspondence, commerce, news, financial contracts—man has been compelled at last to use an identical and universal system of dates.

A new situation thus faces us. It is one thing for the West, with its especial cultural memories, to be lenient—even unduly lenient—toward any anomalies that may be found within its measurement whether of money, weight, distance, or time. It is quite another thing to impose these anomalies on the East where associations are wholly different. What is essential for daily use should be the best that man can devise.

In pointing out the irregularities which are still observable in our reckoning of time, and in trying to discover some way by which these irregularities may be eliminated or reduced to a minimum, responsible calendar reformers have been rendering, therefore, a public service to every person living. Nowhere among them has there arisen a serious difference of opinion except in reference to the practicability of the thirteenth month.

Two organizations are now advocating changes in the calendar which are possible without sacrificing the year of twelve months. In New York City, there is The World Calendar Association and in London, the Rational Calendar Association, with similar objects. The question for the average man is whether the proposed changes, thus limited to what is legislatively possible, are worth the trouble always involved in the adoption of any reform, however simple and beneficial. My own view is that, in the future, the one surprise will be that the calendar, so greatly and so easily improved, was not altered for the better long ago, instead of being delayed.

In one important respect, the calendar needs no improvement. As regards the length and duration of the year, it is not only universal, but ideal. We have escaped from the variations of the lunar year which so greatly perplexed the astrologers among ancient peoples. We have adopted the solar year. And by a singularly ingenious arrangement which was promulgated in the Bull of Pope Gregory XIII., dated 1582, this solar year has been synchronized exactly with the movement of the earth around the sun. Nowadays we take this adjustment for granted. But it is by no means so simple as sometimes we suppose. The solar year contains 365 days, 5 hours, 48 minutes, 46 seconds. For the purpose of accuracy, therefore, we have to make three adjustments. An additional day, February 29, is allowed in every ordinary fourth year. But at the end of every ordinary century, this Leap Year, as we call it, is omitted. In the quadri-centenaries, 1600, 2000, 2400 and so on, the Leap Year is restored.

It was not without a courageous effort of authority that the Gregorian Calendar was achieved. In order to change from the old style to the new style, Pope Gregory had to cut out ten days from the current year, that is, 1582. So acute were ecclesiastical susceptibilities that the alteration was not accepted by Great Britain and her colonies until 1752 when the British calendar had become so unpunctual that eleven days had to be eliminated. In Russia, the Czardom, allied with the Eastern Orthodox Church, never came into line. Russian documents had to be double-dated, old style and new style. Of Soviet Russia, this is no longer true. New style is used, and there is no confusion even though the 7-day week has been rejected.

One item of Calendar Reform stands by itself. It is of little concern to Asiatic peoples like the Indian or the Chinese. It is of less interest to the United States than to certain countries in Europe. I refer to the demand for a fixed Easter.

In western Christendom, Easter may fall on any date between March 22 and April 25. Great Britain complains that the oscillation disturbs the terms of study in schools and colleges and also the legal holidays at Easter and Whitsuntide. In 1928, therefore, the British Parliament passed an act enabling the Government to issue an order fixing the date of Easter, which order must be subject to a consideration for the official opinion expressed by the churches. In 1924, the Vatican took the view that the question could only be determined on the preliminary recommendation of an ecumenical council, and it is more than sixty years since the last of such councils met. In the hope of facilitating action, the League of Nations has recently appealed to the Vatican. Rightly or wrongly, the more eager calendar reformers in Great Britain would like to go ahead and fix Easter for that country without waiting for the approval and coöperation of Rome.

In the date of Easter, no dogma is involved. Yet that point of chronology occasioned controversy and uncertainty during the entire Christian Era. In the year 664, the most important synod of which we have record in England met at Whitby mainly in order to adjudicate upon this matter. Much more was at issue than a detail of the calendar. The real question was whether the nation was to follow the British rite or the Roman, so acknowledging the primacy of the Pope. To this day, the Eastern Orthodox reckoning of Easter differs from the Roman Catholic. It is, moreover, one thing to desire that the date of Easter be fixed. It is quite another thing to determine a date that will suit countries of every different latitude and longitude. Britain proposes the first Sunday after the second Saturday in April, and even so the day would not be definite. Apparently, there can be no fixed Easter, in the full sense of the words, unless we proceed to a more general and widespread calendar reform.

The standard year contains 365 days and Leap Year contains 366 days. All responsible calendar reformers are agreed that the calendar year

should be 364 days, that is, 52 complete weeks, and that January 1 should fall on the first day of the week, namely Sunday.

In our present calendar, a date that is Monday this year becomes Tuesday next year. If Leap Year were to intervene, the date would jump to Wednesday. But if the calendar were to be reformed as suggested, the anniversaries, public and private, would be allocated, respectively, each to its own definite day of the week. Easter could be really fixed. As to other holidays, if we examine the proposed World Calendar, we see that the Fourth of July would be a Wednesday, that Christmas would be a Monday conveniently following a recreational Saturday and Sunday, and that Thanksgiving, being the last Thursday in November, would fall on the 30th. It would be possible for every country to rearrange its holidays according to a schedule affording maximum rest and enjoyment.

The World Calendar is divided not into thirteen months but into twelve. Let us examine it carefully and note the obvious advantages.

In the unreformed calendar, the four quarters of the year are of unequal length. Respectively, they consist of 90 (or in Leap Year, 91) days, 91 days, 92 days and 92 days. There is no reason for this disparity. In The World Calendar, each of the quarters has 91 days or exactly thirteen weeks, nor does Leap Year disturb this uniformity. So far as the quarters are concerned, the proposed reform may be described as 100 per cent.

Under the present arrangement, the lengths of the months are gravely anomalous. In the Augustan Era, these months were regarded less as a convenience for the public than as a means of glorifying the Emperor, which explains the long August, equal to July. Today, seven months have 31 days, four have 30 days and February has either 28 or 29 days. In statistical calculations, the arrangement involves errors of as much as 12 per cent. Precision of comparisons is rendered impossible.

The World Calendar provides the utmost attainable measure of equalization for the months of the year. Eight of them will consist of 30 days, four will have 31 days. The percentage of inequality is reduced to less than a third of what it is today. Also, it will be noticed that the four longer months contain five Sundays while the eight shorter months contain only four Sundays. This means that all the months, without exception, have 26 week days and that, to this considerable extent, they have been absolutely equalized. Each quarter begins with the beginning of a week and ends with the end of a week. And in each quarter, a long month is followed by two short months. Every quarter is thus uniform.

That these would be great advantages, no fair minded person will deny. Yet is there not a difficulty to be faced? By what legerdemain are we to transform a year of 365 or 366 days into a year of only 364 days?

Calendar reformers have boldly cut that Gordian knot. The last day of December would fall on a Saturday. They propose to intercalate a world

holiday called Year Day between that Saturday and Sunday, January 1. Similarly, in Leap Years, there would be a holiday intercalated between Saturday, June 30 in the new calendar, and Sunday, July 1. It is suggested that these festivals, observed by all races and religions throughout the commonwealth of all nations, might be celebrated most appropriately as occasions of universal brotherhood.

It is objected that the week adjoining Year Day or Leap Day will be lengthened in effect to eight days. Into the misgivings of the Jews and of Christian Sabbatarian denominations, it is impossible here to enter. It must be made clear that the great principle of one day rest in seven is not infringed by a concession that secures to mankind the occasional blessing of two days rest in eight. No reform can be accomplished without touching the feelings of certain minorities. It was the case 50 years ago with standard time. But with calendar reform, much of the feeling appears due to misunderstanding which would yield to friendly discussion.

The movement in favor of calendar reform is spreading. Year by year, it arouses an increased interest in numerous directions. It is fortunate that there should be a plan before the public which embodies the maximum of advantage with the minimum of inconvenience.

OBITUARY NOTES

DAVID THIBAULT, whose "Story of the Calendar" is now being published serially in the *Journal of Calendar Reform*, died at his home in Larchmont, N. Y., on June 17, after a brief illness. He was a veteran writer, on a wide variety of subjects. Formerly editor of the popular agricultural journal, *Modern Farming*, he was for six years a member of the agricultural extension staff of the U. S. Department of Agriculture. More recently he was a member of the staff of *The Country Home*, and a frequent contributor of fiction to *Collier's Weekly* and other magazines. He collaborated with Carl Liddle in a novel of the Amazon jungle, "Tunchi," published in 1933, and at the time of his death was just completing a novel of Mississippi negro life which will be published this fall. Mr. Thibault's interest in calendar reform was of long standing. He contributed a series of articles on Calendar Reform and Agriculture to the *Journal of Calendar Reform* in 1931 and 1932, which were later reprinted in pamphlet form and attracted wide attention in governmental and scientific circles.

HERMANN RESE, one of the leaders of the calendar reform movement in Germany, died at his home in Goslar on January 16. He had been an active advocate of the 12-month, equal-quarter plan of revision for many years, and was the author of several pamphlets supporting this plan. He had addressed most of the important chambers of commerce in Germany on the subject. He was the author of a popular book of German aphorisms entitled "The Art of Living," and is remembered in the city of Hanover as the donor of a fountain which is one of the city's prized monuments.

BISHOP HUGH L. BURLESON of the Protestant Episcopal Church, one of the earliest members of The World Calendar Association, died on August 1 at Camp Remington, a church resort in the Black Hills of South Dakota. He was born in Northfield, Minn., in 1865, and was graduated from Racine College in 1887. His ministerial career included service at Waupaca, Wis., Rochester, N. Y., and Fargo, N. D. He was the author of several books and also of a number of prayers which are widely used in the churches. His New York home was at 60 Gramercy Park.

BEGINNING OF THE YEAR

By Arthur Giry

Associate Director of the Ecole Pratique des Hautes Etudes, France

(Abstracted from the French by Katherine S. Bolman)

STUDENTS of the calendar find many chronological puzzles in the study of ancient documents and inscriptions, which require frequent verification of dates necessitating a knowledge of the time systems used since the beginning of history in various countries.

Most old documents, it is true, are dated. But the chronological elements which compose the dates are not in general those which we use today. The custom, today universal, of indicating the date by the month, day and year of the Christian era, according to a calendar common to almost all civilized peoples, gives to all our dates a character of uniformity, precision and clarity which was unknown in the Middle Ages. In order to transpose the dates of medieval documents into terms of our present calendar system we must know in what respects the calendars of medieval times differ from the one we use today, and how to make comparison.

A special importance attaches to the various dates used for beginning the year. For our modern style of considering the year as beginning on January 1 has not always been the rule—Christmas and Easter were used at various times, and various dates in March at other times, to say nothing of such odd dates as August 11, September 1 and September 21.

The need is easily perceived, in studying ancient documents, of giving special attention to the different dates used for beginning the year. For by neglecting these, one would inevitably make errors which might amount to an entire year, inverting the chronological order of certain documents and thereby altering completely their significance.

Unfortunately, the manner in which the dates are written rarely indicates the style of dating which has been used. To find out the accurate meaning of a date, then, one must know the usage of different countries, chancelleries and jurisdictions during the various periods of their history. Even in the same country or region, different systems were often used simultaneously. Summarized briefly:

January 1. This was used as the starting point of the Roman year from about the Year of Rome 601. It was used in many European countries during the Middle Ages, and even where the civil year began on other dates, it remained by tradition the starting point of the astronomical year. By the end of the 16th Century, January 1 replaced all other dates in most countries of continental Europe. It was not adopted by Russia until 1725, nor by Great Britain (and the American Colonies) until 1752.

March 1. March was the first month of the Roman religious year. The Germanic peoples, or at least the Franks, also began their year on March 1. As the official style during the Middle Ages, however, it was very little used outside Venice, where it prevailed until the end of the Republic. It was used in parts of France under the Merovingians; and by Henry I.

March 21. As the supposed date of the spring equinox, this date was used as the beginning of the year in Russia from 1500 until 1725.

March 25. Here is confusion indeed, with two variant styles of dating, one known as the Florentine Style and the other as the Pisan Style. The former and more general usage counted the date at the 25th of March *following* January 1, while the latter dated from the March 25 *before* our January 1. The Florentine Style was used in northern Italy until 1749, and in southern France from the 11th to the 13th centuries. In England this style was introduced by the Normans in 1066; it was used in England and America until 1751, in Scotland until 1599. The Pisan Style was used in Pisa until 1750, and by Popes of the 12th Century. The religious significance of March 25 is as the date of the Annunciation.

Easter Day. This date was one of the most widely used in the Middle Ages, especially in France, although of all dates for starting the year it was the most irrational and confusing. For Easter being a movable feast which varied by 35 days, one year could number 13 months and another only 11. To determine a date under this system, one must first know the date of Easter in the particular year in question. According to this style the length of years varied from 330 to 400 days. Some years contained the same date twice while others lacked certain dates entirely. When the same date occurred twice in a year, documents were often dated "April 15, before Easter," or "April 15, after Easter." The custom of starting the year at Easter goes back to very early times. It existed in Flanders in the 9th Century, and was followed by the kings of France from the time of Louis VI or earlier, hence becoming known as the French Style. It was in general use in France, parts of Germany, Belgium and Holland.

Easter Saturday or Monday. These dates also were sometimes used instead of Easter Day for the beginning of the year.

August 11. This date, marking the Feast of St. Tiburce, was used in Denmark for a considerable period after 1559.

September 1. This date was used by the Greeks when they counted time from the Creation. It was also the beginning of indictional years in Rome.

September 21. France used the autumn equinox during the Republic.

December 25. This "Style of the Nativity" was used in many countries at various times. It was general throughout Europe in the Middle Ages, and on the Spanish peninsula until the 16th century. It should be noted, however, that the use of this style was nowhere exclusive; other systems were in use concurrently with it.

EXCERPTS AND REVIEWS

British Editorial Interest

By J. B. Perry Robinson

Assistant Secretary of the Rational Calendar Association, London

NEWSPAPERS throughout Great Britain have shown their interest in calendar reform through the extended comments which they have recently made on a booklet issued by the Rational Calendar Association in support of the 12-month, equal-quarter revision. The booklet has a cover with a novel and striking device which illustrates, visually and mechanically, the type of calendar approved.

"Nineteen British organizations favor the new calendar," says the London *Morning Post*, which lists some of the practical results of the reform as follows: "All annual social fixtures would have their own permanent dates; birthdays, wedding anniversaries and all other anniversaries would always fall on the same weekday and month-day; fixtures which now have to be varied according to the day of the week, can be standardized; every month will contain 26 week-days, and statistics between one year and another will be strictly comparable."

The Nottingham *Guardian* editorializes enthusiastically: "The advantages are so manifest that it is strange the calendar is not adopted—until we realize that however much people would care to see the calendar 'tidied up' and rationalized in accordance with the spirit of this scientific and mechanical age, there is a rooted objection to absolute innovations until sheer necessity arises. We adopted daylight saving only when the war period pointed the need. As it stands today, our calendar is a queer anomalous and irregular hodgepodge, more fitted to the Dark Ages than to the illuminated twentieth century."

In another editorial the same paper points to the cover device on the Association's pamphlet and says: "The Rational Calendar Association is one of the most enterprising of the reformers. The merit of its plan is neatly brought home in its pamphlet by the attachment of a revolving disk to the front cover, which brings the names of the months, seen through the apertures, into relation with the weeks and days."

Several of the newspapers weigh the relative merits of the 12-month and 13-month proposals for revision. "The balance of desirability," says the Portsmouth *News*, "would seem to be in favor of the 12-month year, introduction of a 13th month being a somewhat drastic experiment." A similar conclusion is reached by the *Northern Daily Mail:* "The conclusion is that it is possible to obtain practical reforms with a 12-month year."

The Greenock *Telegraph* emphasizes that this is the type of perpetual calendar approved by Lord Desborough, former president of the London Chamber of Commerce, and leader of the movement for a stabilized Easter. This paper adds: "The League of Nations and other international bodies have studied the best method of reforming the calendar, and the two chief proposals—one for a 12-month, equal-quarter system, and one for a 13-month year—are analyzed in full in the booklet. The effect of both systems on our daily life is thoroughly explored, with the conclusion that so drastic an innovation as a 13th month is unnecessary and undesirable."

Advantages of the Rational Calendar Association's plan are "obvious," according to the Liverpool *News*, which explains: "Renewed efforts are being made to secure a stabilized Easter on the lines of the British Easter Act, and the adoption of a rational perpetual calendar, freed from the defects of the Gregorian Calendar now in use. There is nothing sacrosanct about the calendar. It has been amended before by dictators and popes. It can be revised again in accordance with the needs of a scientific age."

The magazine page of the *Daily Mail*, in its popular Saturday issue, recently gave its top five-column headline to a presentation of the plans for calendar reform, featuring the League of Nations' approval of the plan. "Are you interested in calendar reform?" the editor asks his readers, and continues:

"Probably not. But when you wish to know how many days there are in a par-

ticular month you run over the old doggerel: Thirty days hath September, April, June and November, and so forth. Of course, having been taught this at school, and having grown up with it, so to speak, we have come to accept it like mumps or measles, as an infliction to be borne.

"There are those, however, who would like our present hotch-potch calendar reformed. The existing calendar is bad for business, and it is mainly on business grounds that reform is being pressed."

Growing Demand for Change

By Rev. T. E. R. Phillips

Secretary of the Royal Astronomical Society, in "Splendour of the Heavens"

DEFECTS in the calendar have led in recent years to a growing demand for reform. To begin with, the date of the commencement of the year is not suitable, strictly speaking from the scientific point of view, since January 1 marks no outstanding epoch in the relative positions of the sun and earth. It has been suggested that the most natural date for the beginning of the year would be that which we now call December 22, since it is the date when the sun, having reached its greatest southern declination, is about to turn and travel north again. It may be questioned, however, whether any such readjustment at this stage of the world's history would not result in more dislocation and confusion than advantage, since the gain would be merely a technical one.

But a far more serious defect in our existing calendar is the inequality in the division of the year into months, quarters and half-years. The inconvenience is felt in commercial and business affairs such as the arrangements of accounts and the calculation of salaries, interest, pensions, rent and so forth. In Great Britain the quarters as reckoned from Lady Day, Midsummer Day, Michaelmas Day and Christmas Day contain in common years 90, 87, 97 and 91 days respectively, and even if we divide the year according to the calendar months the intervals are 90, 91, 92, and 92 days. The first "half" of the year thus contains only 181 days, and the second "half" 184 days.

A suggestion that has been made which would produce greater symmetry is that each quarter should consist of three months of 31, 30 and 30 days successively with the extra day at the end of the last quarter. Yet another proposal is to divide the year into 13 months, each of which would consist of 28 days or four weeks exactly (neglecting for the moment the odd day), but the dislocation involved in this readjustment is so considerable that it would receive scant support.

It will be noticed that in any attempt to arrange the year in equal divisions, the odd day presents a difficulty which is insuperable. It also prevents the calendar being a perpetual one, a type which not a few people engaged in business transactions think desirable. For were the year to consist of 364 instead of 365 days, the same dates would always fall on the same days of the week year after year, an arrangement with obvious advantages.

Accordingly it has been proposed to remove the obstacle in the way of a completely orderly calendar by excluding December 31 from the general scheme—so that it would be neither a Sunday, nor a Monday, nor a Tuesday, nor any other named day of the week, but an extra and uncounted day which might be a general holiday. In leap years there would, of course, be two such days, one probably being arranged to follow the last day of June and the other that of December: each half year would thus have an extra day attached to it without upsetting the orderly procession of calendar events.

A proposed reform which is commonly regarded as most pressing is the stabilization of Easter. This of course does not involve any question fundamental to the calendar, but it relates to the observance of a festival which occupies a key position in the ecclesiastical calendar, and also affects certain commercial, industrial, legal and educational interests.

Supposing an agreement to fix Easter should eventually be arrived at: what Sunday is most likely to be chosen? It seems obvious that the most suitable day would be the Sunday which falls closest to the actual dates of the events commemorated, supposing such can be obtained. If then Easter were fixed for the second Sunday in April it would almost always fall within a very few days of the commemorated event, and it would be much more accurately an anniversary than is the case under the existing rule.

CURRENT PRESS COMMENT

Quarterly Periods

Credit & Financial Management, New York City

Business which works with quarterly periods plans ahead for many months and tries to plan by comparison with previous periods, is continually confused by the changes of date and day and the variations as to date of similar periods. The business man should be interested in calendar reform; from the increasing evidence business shows, one can ascertain an aggressive rather than a passive interest.

Fixed Easter

London Times

Lord Desborough asked the Government whether they had received any further information from the League of Nations with regard to their inquiries about a fixed date for Easter. He said it seemed rather anomalous that the date of the Birth of Our Lord should be fixed at a certain date in the Julian Calendar and that the dates of the celebration of the Crucifixion and the Resurrection should wander about a period of 35 days and cause a lot of unnecessary dislocation according to the vagaries of a moon which was not even the real moon of the heavens.

Countless Contracts

Brooklyn (New York) Eagle

Changing the calendar requires the approval of the greater part of the world. The proposition affects the dates of countless contracts to pay and to perform other obligations. It touches upon the practices of great religious bodies, not to mention the current routine of business. Such an enterprise takes time.

An Eye to Time

Hamburg (Iowa) Reporter

For the sake of simplicity, it is desirable in calendar reform that the long months should occur in logical order or according to a pattern easy to memorize. Since, fortunately, there are just four such months in The World Calendar, they can be placed one in each seasonal quarter. Thus the four quarters are made equal in number of days, except for the fourth quarter, which will in practice probably be construed as including an extra day, Year Day, and except for the second quarter which will, every fourth year, probably be construed as including the extra day, Leap Day.

On making up a calendar in which every quarter has one month of 31 days and two months of 30 days, for a total of 91 days, the beauty of the scheme is apparent.

Careful Consideration

Montgomery (Ala.) Journal

In point of fact, however, a careful consideration of the proposition will show that a 13-month year will eliminate bimonthly, quarterly and semi-annual periods. Constantly would we have to consult two different calendars (the old and the new) to find the equivalent of any date in the two. The landlord would demand, and the renter would pay rent 13 times a year, instead of 12; monthly bills would come 13 times every year; monthly magazines would be published 13 times, instead of 12. There would be an added expense all along the line.

13 Months Not Practical

Cherokee (Ia.) News

The proposal of a 13-month year, each month consisting of 28 days, and each beginning on Sunday, which at one time had gained much support, was dismissed as impracticable by N. D. McCombs in a talk at the Rotary luncheon in which he discussed difficulties encountered in the world-wide effort to reform the calendar.

Preference was given to the so-called "World Calendar," which retains the 12-month plan, with four equal quarters. This plan, said Mr. McCombs, possesses many advantages over any other plan suggested, and a strong movement is already under way to secure its world-wide adoption in 1939, the first year in which January 1 falls on Sunday. Adoption at that time would simplify the change, he said.

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CHARLES D. MORRIS CARL LIDDLE

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FROM Charles B. Davenport, director of the Department of Genetics of the Carnegie Institution of Washington, Cold Spring Harbor, Long Island, comes the following memorandum which will be of interest to scientists as well as to students of calendar reform:

"There are certain definite reasons why the anthropometrist and the student of child development prefer The World Calendar to the 13-month plan. In the study of child development it is necessary that careful measurements of the body should be made from time to time. During the earlier months, when the changes are rapid, the measurements must be made frequently, at least monthly. Later they must be made at less frequent intervals. Always, however, the measurements must be made more frequently than once a year in order to detect episodes in growth which are often less than a year in duration. Measurements must not be taken too frequently, however, lest the growth changes are less than the unavoidable error in measuring so pliable an object as the human body.

"It is convenient in making repeated measurements to measure on the birth month, if possible on the birth day, and then at periods of one-half or quarter of a year thereafter. This makes more readily obvious the increments, and makes it easy to compute the increments on an annual basis.

"In a year that is divided into a number of months precisely divisible by two, three and four, it becomes easy to take the measurements at periods of one-half, one-third or one-quarter of a year, and to compute the increments; always on the same day of the month.

"If, however, the year is to be divided into thirteen months the whole matter of periodic measuring and the computation of increments becomes much complicated. Of course, no difficulties are insuperable, but one does not like to see difficulties unnecessarily enhanced. What is true of child development studies is true of studies of development of animals.

"For all such studies it is a convenience to have a year divided into units, of which one-half or one-quarter can be readily taken. That is why the anthropometrist and the student of child development and the student of animal development prefer a year of twelve months to one of thirteen months."

FROM THE MAILBAG

The plan for a year with 13 months of 28 days each would entail many difficulties and much confusion as regards the calendars of Christian countries, and especially as regards our Catholic ecclesiastical feast calendar. The plan doesn't fit. It is not suitable or just.—Jacob Wilhelm, Catholic Missionary, Regina, Sask.

I am glad to be counted as one of your members who takes an active interest in this movement.—Lewis E. Ashbaugh, Consulting Engineer, Denver.

I am a member of the Seventh Day Holiness faith. As a strictly civil calendar I think The World Calendar the best and probably most nearly perfect that ever can be made. For religious use it will, in each seven years, coincide with the unbroken weekly cycle once or twice. We think the upsetting of the weekly cycle by The World Calendar will prove educational to our Sabbatarian friends.—Robert G. Sprague, Goodman, Mo.

This is the one sane, sensible, easily applied plan which I have seen proposed. It even takes care of those unfortunates whose birthday was February 29th.—James Whittemore, Lawyer, Santa Barbara, Cal.

Believe that the new calendar as explained in your leaflet deserves the support of every nation and individual or organization. The new method would not throw our records out of comparison with records under the old calendar.—Leon J. Guthrie, Meteorologist, Bakersfield, Cal.

I am rather familiar with the 13-month calendar, which occurred to me as a very good thing, until the advantages of The World Calendar were shown me. That evidently is the best calendar scheme so far presented; and I hope it may be put into operation in 1939.—R. R. Mastin, Lawyer, Seward, Neb.

The World Calendar 12-month plan is a great improvement over our present one and from the standpoint of statistical data alone, is justified above the 13-month plan. —O. W. Monson, Agri. Engineer, Bozeman, Mont.

Your proposed reform stands head and shoulders above the others. It makes date reckoning simplicity itself.—Wilbur T. Kattner, Student, Greeley, Col.

I am heartily in favor of calendar reform and believe the 12-month World Calendar plan most effectively accomplishes the desired end.—Clement K. Corbin, Lawyer, Jersey City.

Your plan is the only calendar reform that would appeal to me and causes least readjustment and opposition.—Harry Anderson, Lawyer, McLeansboro, Ill.

I presume my attitude is somewhat typical of many Americans. Five years ago I took an unjustified attitude against calendar reform. "Bowing to the god of business" I called it and felt rather proud of myself that I should think and sometimes talk against modern ideas which want us to uproot everything that is established. I still feel this somewhat strongly with regard to the thirteen-month calendar. I think it is needlessly revolutionary and does not have nearly so many strong arguments in its favor as does The World Calendar. For the past two years I have had not only my interest but my genuine support brought to the twelve-month World Calendar. This, it seems to me, combines all the good elements of calendar reform, and it involves very few if any of those which do violence to the sentiment and perhaps the religious scruples of the various types of people in the world.—Stanley B. Vandersall, Editor, Junior Christian Endeavor World, Boston.

I think it would be a radical mistake to change to a 13-month calendar.—J. L. Buntin, Agri. Engineer, Napton, Mo.

The proposed 12-month calendar is a great improvement over our present calendar. The majority of thinking people will favor it.—Mrs. J. P. Guilford, Lincoln, Neb.

I have just read "Calendar Reform and Government," and enjoyed it. I am very much interested and prefer the 12-month, equal-quarter plan or "World Calendar." —J. W. Hornsby, State Senator, Austin, Tex.

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